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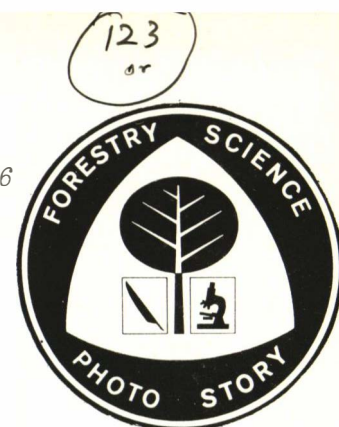
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Photo Story no. 36



When raindrops keep falling on your head, do you ever wonder exactly how much water you're being pelted with? This instrument could give you the answer.

Photo Story No. 36



When the need for a special rain gage arose and one could not be found in existing catalogs, the Northeastern Forest Experiment Station's project at Berea, Kentucky, was not to be stymied. Willie R. Curtis, Project Leader, started putting some ideas on paper. Project technicians built a prototype for evaluation. Preliminary tests were satisfying.

Curtis then drew up plans for the gage and sent them out for fabrication bids. Twenty of the gages were built; a dozen of them are now operating in the field.

The project needed a recording gage that would operate for long periods of time unattended, yet would provide a chart with a time scale that would lend itself to accurate 5-minute time-interval readings.

The rain gage was designed to use a standard FW-1 type water-level recorder equipped with a long-term strip chart drive.

To synchronize the pen movement and the chart divisions, it was necessary to provide for a ratio of 2.4:1.0 for the cross-sectional areas of the collector ring and the storage tank. The project decided on a 12-inch diameter collector

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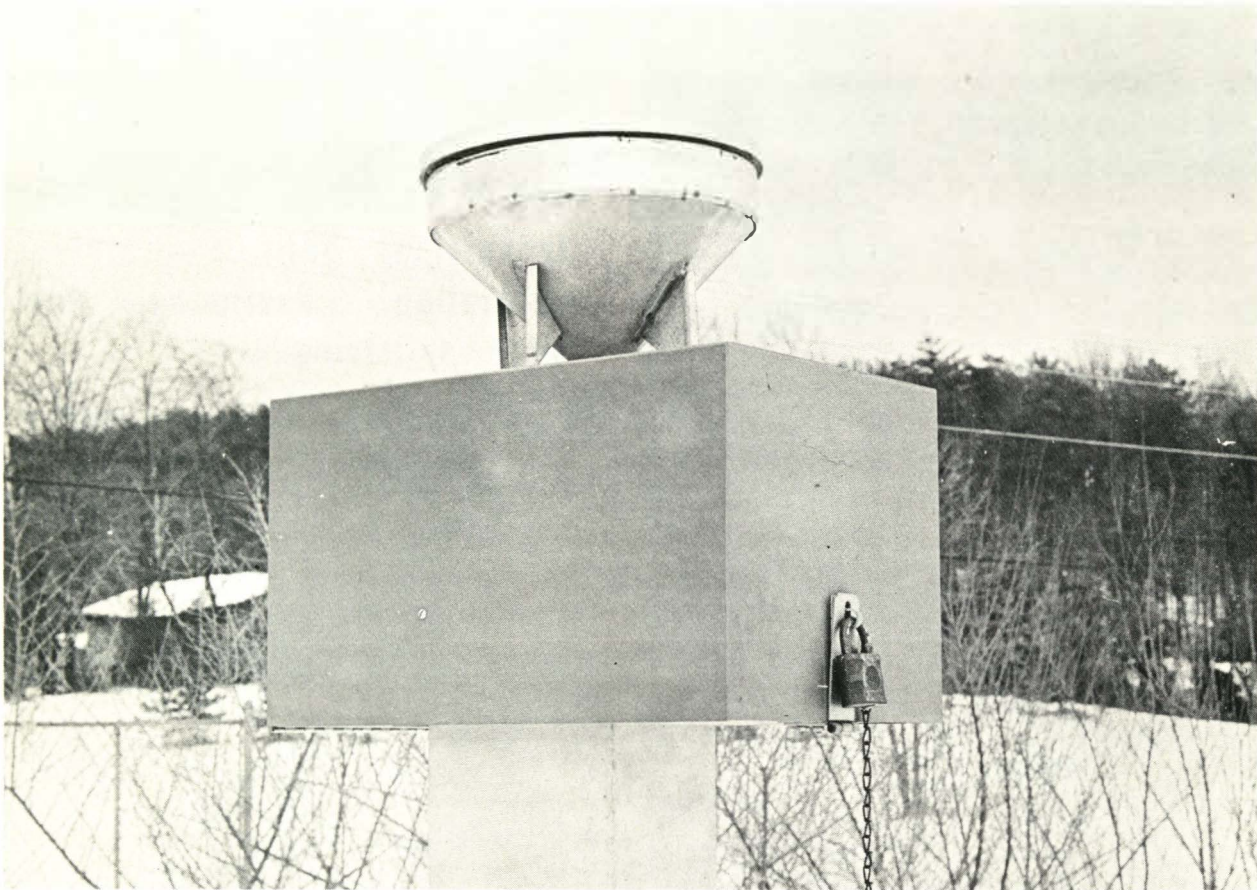
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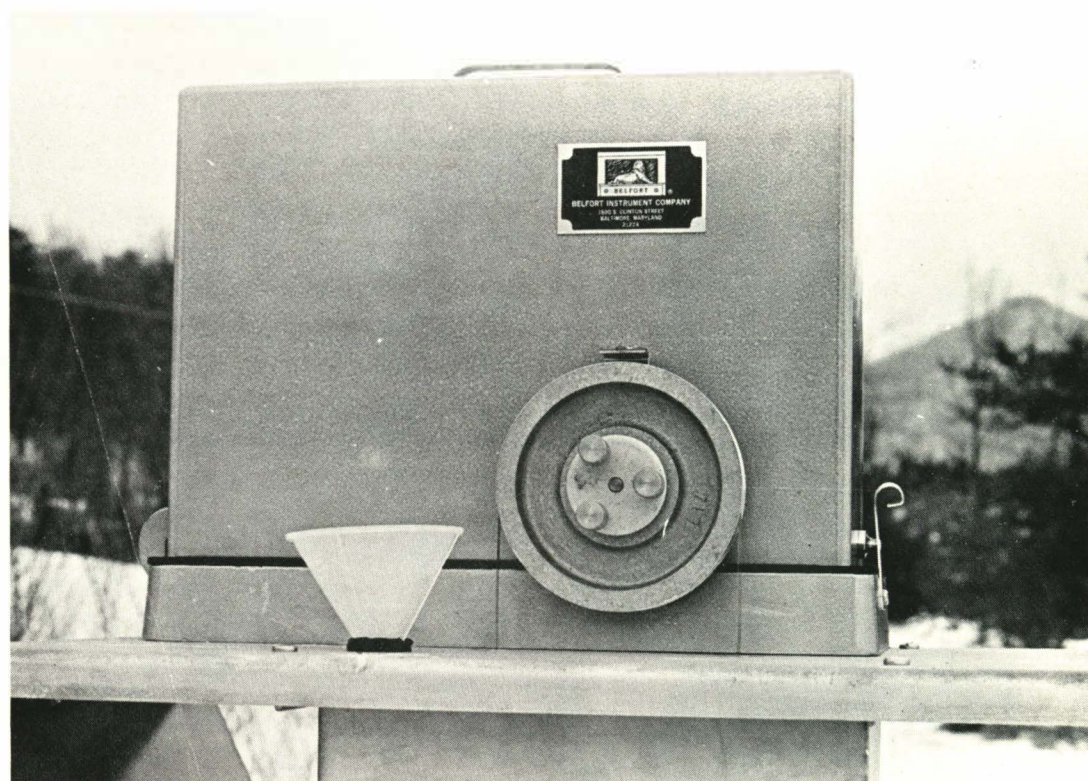
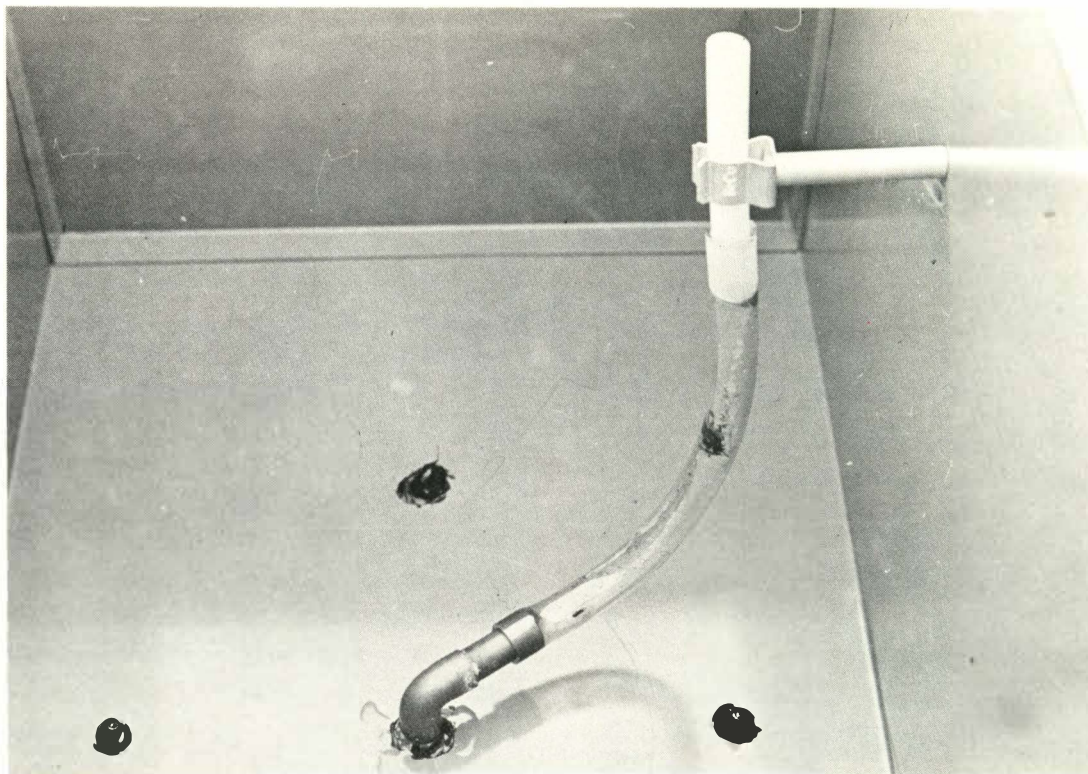
ring having an area of 113.097 square inches. To meet the necessary ratio, this meant that they had to provide a storage tank with a cross-sectional area of 47.124 square inches. Many combinations would meet this criteria, but they settled for a tank of 5.71 inches by 8.25 inches inside measure. This allowed adequate clearance to accommodate the recorder with a 4-inch pulley and a

4-inch float.

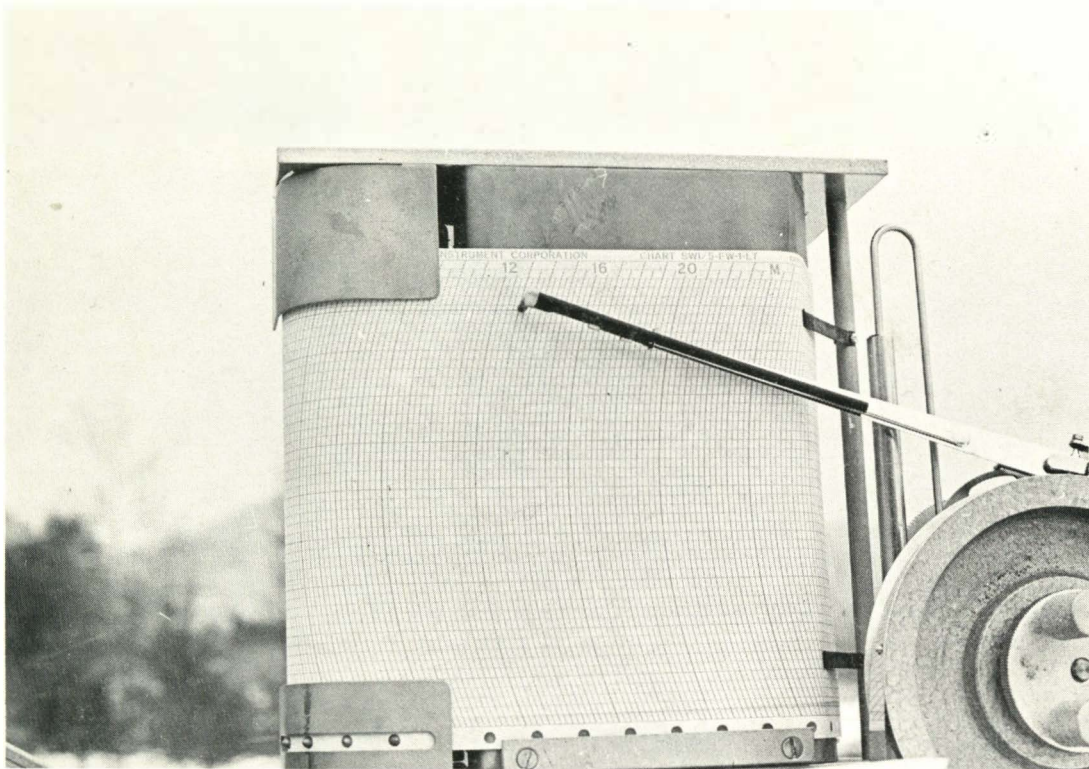
The storage tank itself is 60 inches high with a pedestal mount. It is equipped with two drains: one close to the bottom and one 6 inches off the bottom. The upper drain is fitted with a petcock, which allows for the emptying of the tank while the instrument is being serviced. Enough water is left in the tank to always buoy the float.



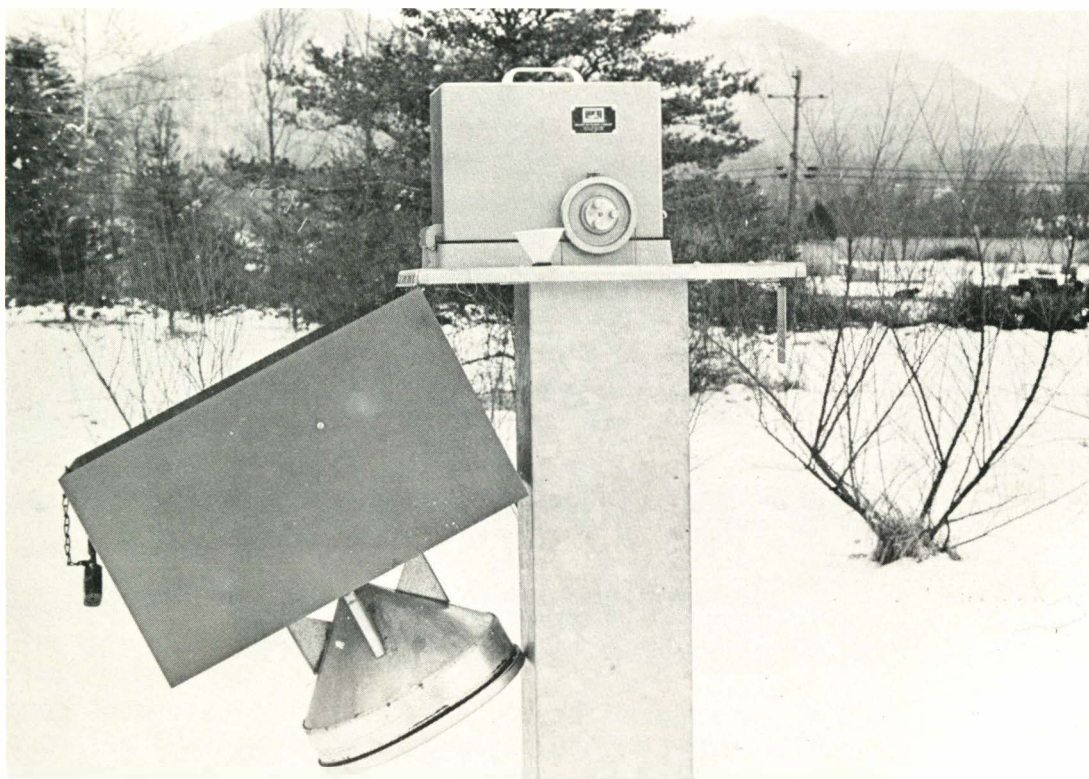
1. The collector ring with integral funnel is mounted over a weather-proof instrument housing.



2. Water collected in the ring flows through a tube in the instrument compartment and into a (3.) funnel leading to the storage tank. A water-level recorder and float are used to measure water height in the tank. The height of the storage tank and the strip chart drive used determine the length of time of unattended operation. The 60-inch high tank with the 12-inch collector ring has a maximum range of 22 inches of rainfall.



4. The chart drive used by the project has a range of up to 90 days, but they try to visit the gages monthly.



5. The instrument housing is hinged to the tank and can be flipped over, allowing complete access to the recorder for chart changing and servicing.